ABSTRACT
(1 page only)

TITLE OF THE PAPER:

SCIENTIFIC RESEARCH ON SPACE STATION FREEDOM

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DESCRIPTION: (should clearly present the purpose of your paper and include detailed information on the methods and results of your research)

Space Station Freedom (SSF) is an international venture involving the. United States, Europe, Japan and Canada, which will provide orbital research facilities more sophisticated and powerful than anything currently available. 11 will be capable of being reconfigured over its 30 year lifetime to support a variety of basic and applied research in life, materials and observational sciences. Laboratory modules will be outfitted with equipment ranging from small sub-rack payloads to major facilities such as mate.ria]s processing furnaces and the 2..5 meter Centrifuge Facility. The most unique aspect of a space-based research laboratory is the weightless environment where gravity driven phenomena such as convection, buoyancy and the.rlnal stratification do not occur. Comparatively weak physical interactions normally masked may prevail, fostering novel physical phenomena. All life has had to deal with gravity in the development of individual organisms and the evolution of species. Every organism sent into space has had its structure and function modified by that experience. On SSF chronic studies of the effect of weightlessness will be conducted on humans and on plants and animals. SSF will also provide a platform for viewing outward and towards Earth as well as the opportunity 10 study the space environment.

The overall international community needs 10 be made aware of the potential that will exist on Freedom to conduct unique space science researcl ı and technology development. For example, fluid handling, and space craft materials coating experiments will be more readily accomplished. Recent developments in payload accomodations will facilitate user access 10 the station, Space Station Freedom will be the base for manned space flight research Over the next few decades.